



IAP7 Rec'd PCT/PTO 24 FEB 2006 PCT

PTO/SB/17 (01-06)

Approved for use through 7/31/2006. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

FEE TRANSMITTAL
For FY 2006☐ Applicant claims small entity status. See 37 CFR 1.27**TOTAL AMOUNT OF PAYMENT**(\$)
0.00**Complete if Known**

Application Number	10/554,316
Filing Date	October 24, 2005
First Named Inventor	Gregory P. CARMAN et al.
Examiner Name	Not Yet Assigned
Art Unit	Not Yet Assigned
Attorney Docket No.	58086-224991

METHOD OF PAYMENT (check all that apply)☐ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): _____☒ Deposit Account Deposit Account Number: 22-0261 Deposit Account Name: Venable LLP

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☐ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, except for the filing fee☒ Charge any additional fee(s) or underpayment of fee(s) under 37 CFR 1.16 and 1.17 ☒ Credit any overpayments**FEE CALCULATION** (All the fees below are due upon filing or may be subject to a surcharge.)**1. BASIC FILING, SEARCH, AND EXAMINATION FEES**

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEES

Fee Description	Fee (\$)	Small Entity Fee (\$)
Each claim over 20 (including Reissues)	50	25
Each independent claim over 3 (including Reissues)	200	100
Multiple dependent claims	360	180

<u>Total Claims</u>	<u>Extra Claims</u>	<u>Fee (\$)</u>	<u>Fee Paid (\$)</u>
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 $\text{HP} - 20 = \text{ } \times \text{ } = \text{ }$

HP = highest number of total claims paid for, if greater than 20.

<u>Indep. Claims</u>	<u>Extra Claims</u>	<u>Fee (\$)</u>	<u>Fee Paid (\$)</u>
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 $\text{HP} - 3 = \text{ } \times \text{ } = \text{ }$

HP = highest number of independent claims paid for, if greater than 3.

Multiple Dependent Claims

<u>Fee (\$)</u>	<u>Fee Paid (\$)</u>
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3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

<u>Total Sheets</u>	<u>Extra Sheets</u>	<u>Number of each additional 50 or fraction thereof</u>	<u>Fee (\$)</u>	<u>Fee Paid (\$)</u>
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 $\text{Total Sheets} - 100 = \text{ } / 50 \text{ (round up to a whole number)} \times \text{ } = \text{ }$ **4. OTHER FEE(S)**

Non-English Specification, \$130 fee (no small entity discount)

Other (e.g., late filing surcharge): _____

Fees Paid (\$)**SUBMITTED BY**

Signature	<u>Steven J. Schwarz</u>	Registration No. (Attorney/Agent)	47,070	Telephone	(202) 344-4295
Name (Print/Type)	Steven J. Schwarz	Date	February 24, 2006		

727017



Docket No.: 58086-224991
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Gregory P. CARMAN et al.

Application No.: 10/554,316

Confirmation No.: Not Yet Assigned

Filed: October 24, 2005

Art Unit: Not Yet Assigned

For: MICROMEMBRANE ACTUATOR

Examiner: Not Yet Assigned

INFORMATION DISCLOSURE STATEMENT (IDS)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Pursuant to 37 CFR 1.56, 1.97 and 1.98, the attention of the Patent and Trademark Office is hereby directed to the references listed on the attached PTO/SB/08. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the references be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

This Information Disclosure Statement is being filed more than three months after the date of entry of the national stage of a PCT application, but before the mailing date of a First Office Action on the merits. Therefore, no fee is believed to be due for the filing of this Information Disclosure Statement.

Copies of the fourteen (14) references listed on the attached PTO/SB/08A are submitted herewith.

In accordance with 37 CFR 1.97(g), the filing of this Information Disclosure Statement shall not be construed to mean that a search has been made or that no other material information as defined in 37 CFR 1.56(a) exists. In accordance with 37 CFR 1.97(h), the filing of this Information Disclosure statement shall not be construed to be an admission that any patent, publication or other information referred to therein is "prior art" for this invention unless specifically designated as such.

It is submitted that the Information Disclosure Statement is in compliance with 37 CFR 1.98 and the Examiner is respectfully requested to consider the listed references.

The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 22-0261, under Order No. 58086-224991.. A duplicate copy of this paper is enclosed.

Dated: 02/24/2006

Respectfully submitted,

By Steven J. Schwarz

Steven J. Schwarz

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PTO/SB/08a/b (07-05)

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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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Substitute for form 1449A/B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)				Complete if Known	
				Application Number	10/554,316
				Filing Date	October 24, 2005
				First Named Inventor	Gregory P. Carman
				Art Unit	Not Yet Assigned
				Examiner Name	Not Yet Assigned
Sheet	1	of	1	Attorney Docket Number	58086-224991

NON PATENT LITERATURE DOCUMENTS				
Examiner Initials	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²	
	CA	P. KRULEVITCH et al., "THIN FILM SHAPE MEMORY ALLOY MICROACTUATORS," Journal of Microelectromechanical Systems, December 1996, Vol. 5, No. 4, pages 270-282.		
	CB	Daniel D. SHIN et al., "OPERATING FREQUENCY OF THIN FILM NITI IN FLUID MEDIA", Proceedings of ASME international Mechanical Engineering Congress and Exposition, November 11-16, 2001, pages 1-7.		
	CC	W. L. BENARD et al., "A TITANIUM-NICKEL SHAPE-MEMORY ALLOY ACTUATED MICROPUMP", Transducers, International Conference on Solid-State Sensors and Actuators, June 16-19, 1997, PAGES 361-364.		
	CD	William L. BENARD et al., "THIN-FILM SHAPE-MEMORY ALLOY ACTUATED MICROPUMPS", Journal of Microelectromechanical Systems, June 1998, Pages 245-251, Vol. 7, No. 2.		
	CE	H. Kahn et al., " THE TINI SHAPE-MEMORY ALLOY AND ITS APPLICATIONS FOR MEMS", Journal of Micromechanics and Microengineering, Volume 8, 1998, pages 213-221.		
	CF	H. KAHN et al., "TITANIUM-NICKEL SHAPE MEMORY THIN FILM ACTUATORS FOR MICROMACHINED VALVES", Materials Research Society Symposium Proceedings, 1997, pages 227-233, Vol. 444.		
	CG	Eiji MAKINO et al., "FABRICATION OF TINI SHAPE MEMORY MICROPUMP", Sensors and Actuators, 2001, pages 256-262, Vol. 88.		
	CH	Eiji MAKINO et al., " DYNAMIC ACTUATION PROPERTIES OF TINI SHAPE MEMORY DIAPHRAGM", Sensor and Actuators, 2000, pages 128-135, Vol. 79.		
	CI	Eiji MAKINO et al. " MICROMACHINING OF TINI SHAPE MEMORY THIN FILM FOR FABRICATION OF MICROPUMP", Sensors and Actuators, 2000, pages 251-259, Vol. 79.		
	CJ	Eiji MAKINO et al., " THERMO-MECHANICAL PROPERTIES OF TINI SHAPE MEMORY THIN FILM FORMED BY FLASH EVAPORATION", Sensors and Actuators, 1999, pages 156-161, Vol. 75.		
	CK	Dong XU et al., "CHARACTERISTICS AND FABRICATION OF NITI/SI DIAPHRAGM MICROPUMP", Sensors and Actuators, 2001, Volume 93, pages 87-92.		
	CL	Dong XU et al., "A NOVEL MICROPUMP ACTUATED BY THIN-FILM SHAPE-MEMORY ALLOY" Proceedings of SPIE, Electronics and Structures for MEMS, October 1999, Vol. 3891.		
	CM	Li WANG et al., " CONTROL OF INTERNAL STRESS IN SMA/SI BIMORPH MICROACTUATORS", 2001, pages 87-92, Vol. 93.		
	CN	Dong XU et al., "DYNAMIC ACTUATION BEHAVIOR OF NITI/SI DIAPHRAGM MICROPUMP", Micromachining and Microfabrication Process Technology VI, September 18-20, 2000, pages 324-330, Vol 4174.		

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Examiner Signature		Date Considered	
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